AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (original)   A signal separation method, comprising:

detecting a composite electrical signal at a subcutaneous non-intrathoracic location, the composite electrical signal associated with a plurality of sources;

receiving information associated with a non-electrophysiological cardiac source;

separating a signal from the composite electrical signal; and

identifying the separated signal as a cardiac signal using the separated signal and the non-electrophysiological cardiac source information.

2. (original)   The method of claim 1, wherein identifying the separated signal as the cardiac signal comprises providing a detection window defined by a start time and a stop time determined using the non-electrophysiological cardiac source information.

3. (original)   The method of claim 2, further comprising detecting a QRS complex within the detection window.

4. (original)   The method of claim 1, wherein the non-electrophysiological cardiac source information comprises acoustic emission information.

5. (original)   The method of claim 1, wherein the non-electrophysiological cardiac source information comprises a temporal location of a peak heart-sound.

6. (original)   The method of claim 5, wherein identifying the separated signal as the cardiac signal comprises providing a detection window defined by a start time preceding the temporal location of a peak heart-sound.

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7. (original) The method of claim 1, wherein the non-electrophysiological cardiac source information comprises blood-flow information.

8. (original) The method of claim 1, wherein the non-electrophysiological cardiac source information comprises pulse pressure information.

9. (original) The method of claim 1, wherein the non-electrophysiological cardiac source information comprises pulse oximetry information.

10. (original) The method of claim 1, wherein the non-electrophysiological cardiac source information comprises transthoracic impedance information.

11. (original) The method of claim 1, wherein identifying the separated signal as the cardiac signal comprises providing a detection window within which the cardiac signal is correlated to a signal associated with the non-electrophysiological cardiac source.

12. (original) The method of claim 1, further comprising determining a time separation between a peak of the separated signal and a peak of a signal associated with the non-electrophysiological cardiac source.

13. (original) The method of claim 12, wherein the time separation is used to identify a cardiac signal.

14. (original) The method of claim 1, wherein the signal is separated from the composite electrical signal using blind source separation.

15. (original) The method of claim 14, wherein the blind source separation comprises an independent component analysis performed on the composite electrical signal.

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16. (original) The method of claim 1, further comprising detecting a cardiac condition using the separated signal.

17. (original) The method of claim 1, further comprising detecting a cardiac condition using the separated signal by performing a correlation between the separated signal and a signal associated with the non-electrophysiological cardiac source.

18. (original) The method of claim 1, further comprising detecting a cardiac arrhythmia using the cardiac signal.

19. (original) The method of claim 18, further comprising treating the cardiac arrhythmia.

20-29. (canceled)

30. (original) An implantable device, comprising:

    means for subcutaneously detecting a composite electrical signal associated with a plurality of signal sources;

    means for subcutaneously detecting non-electrical cardiac activity;

    means for separating a signal from the composite electrical signal; and

    means for determining whether or not the separated signal is a cardiac electrical signal using the detected non-electrical cardiac activity.

31. (original) The device of claim 30, wherein the determining means comprises means for performing a time correlation between the separated signal and a signal associated with the detected non-electrical cardiac activity.

32. (original) The device of claim 30, wherein the determining means comprises means for evaluating the separated signal within a detection window.

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33. (original) The device of claim 32, further comprising means for determining a start time to initiate the detection window.

34. (original) The device of claim 30, further comprising means for detecting an arrhythmia using the cardiac electrical signal.

35. (original) The device of claim 34, further comprising means for treating the arrhythmia.

36. (original) The device of claim 30, further comprising means for discriminating cardiac rhythms.

37-48. (canceled)